Being oneself through time: bases of self-continuity across 55 cultures

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Bases of Self-Continuity Across 55 Cultures

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Abstract

Self-continuity—the sense that one's past, present, and future are meaningfully connected—is considered a defining feature of personal identity. However, bases of self-continuity may depend on cultural beliefs about personhood. In multilevel analyses of data from 7,287 adults from 55 cultural groups in 33 nations, we tested a new tripartite theoretical model of bases of self-continuity. As expected, perceptions of stability, sense of narrative, and associative links to one's past each contributed to predicting the extent to which people derived a sense of self-continuity from different aspects of their identities. Ways of constructing self-continuity were moderated by cultural and individual differences in mutable (vs. immutable) personhood beliefs—the belief that human attributes are malleable. Individuals with lower mutability beliefs based self-continuity more on stability; members of cultures where mutability beliefs were higher based self-continuity more on narrative. Bases of self-continuity were also moderated by cultural variation in contextualized (vs. decontextualized) personhood beliefs, indicating a link to cultural individualism-collectivism. Our results illustrate the cultural flexibility of the motive for self-continuity.

Keywords: Identity, Culture, Self-Continuity, Mutability, Personhood Beliefs, Mindset

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Self-continuity can be defined as the sense that past, present, and future time-slices of one's identity are meaningfully connected. Philosophers (Taylor, 1989; Wiggins, 2001), as well as both classic (Erikson, 1968; James, 1892) and contemporary (Chandler, Lalonde, Sokol, & Hallett, 2003; Vignoles, Sani, Easterbrook, & Cvetkovska, 2017) psychologists, portray self-continuity as a defining feature of personal identity. Both personal and societal functioning arguably depend on people's forming identities that are seen to persist over time—not just from past to present but also into the future. Without self-continuity, people could not learn from experience, be held accountable for their past actions, make plans for their future, nor cooperate with others in the present to secure future benefits.

During the life-course, however, people experience physical, psychological and social changes, and neither past nor future selves can be directly experienced in the present. Hence, people's sense of being the same person through time is not a given, but must be actively constructed—and both individuals and cultural groups may prioritize different bases of self-continuity within identity construction (Chandler et al., 2003). In the current paper, we examine the role of cultural and personal beliefs about personhood in moderating the ways in which people construct their personal sense of self-continuity.

Self-Continuity and its Bases

Motivated Identity Construction Theory (Vignoles, 2011) portrays self-continuity as a core identity motive. The theory states that people strive to construct and maintain a sense of self-continuity, and that succeeding in this task may have important implications for personal and societal well-being. Studies have shown evidence that individuals strive to achieve and maintain a sense of self-continuity (Sedikides, Wildschut, Routledge, & Arndt, 2015; Shrauger, 1975; Troll & Skaff, 1997; Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006;

Vignoles, Manzi, Regalia, Jemmolo, & Scabini, 2008), and that deficits or threats to self-continuity are associated with negative personal and societal outcomes, including low self-esteem, dissociation, negative intergroup attitudes, and suicidality (Ball & Chandler, 1989; Lampinen, Odegard, & Leding, 2004; Rosenberg, 1986; Smeekes & Verkuyten, 2015).

People may construct a sense of self-continuity in different ways. Focusing on past-to-present continuity, Chandler and colleagues (2003) proposed and found that "continuity warrants"—the reasons that people gave when asked explicitly to justify their self-continuity—could be classified into two different 'streams', which they called 'essentialist' and 'narrativist'. Essentialist strategies involved emphasizing *stability* of the self over time, by either trivializing, or denying, change (see also Ross, 1989). Chandler et al. related these strategies to the belief that a person has an underlying and fixed essence, a "true nature". However, they proposed that individuals can construct their sense of self-continuity alternatively through developing *narratives* that account for change. Through narratives, people can connect different parts of their past and tell the story of how they became who they are in the present, adopting narrative devices such as causal progressions and turning points to make sense of change and instability within a single storyline (see also Hammack, 2008; McAdams, 2011; McLean, Pasupathi, & Pals, 2007).

Both stability and narrative might be used to form reasoned arguments for one's self-continuity. However, people may also bolster their sense of self-continuity on a more implicit and intuitive level, without engaging in explicit reasoning. Sedikides et al. (2015) showed that feelings of nostalgia for one's past can increase self-continuity, and that people may compensate for discontinuities by using nostalgia to restore self-continuity. Research has also suggested that people use cherished possessions to bolster self-continuity, especially during major life-transitions (Habermas & Paha, 2002; Kroger & Adair, 2008). Without resorting to explicit reasoning about stability or storylines, people seemingly can derive a sense of self-

continuity from thoughts, feelings, actions or objects that remind them of, or make them feel close to, their past selves. Hence, Vignoles et al. (2017) proposed a third basis for self-continuity, beyond stability and narrative: *associative links to one's past*. They argued that a single basis, or any combination of the three, could be used to achieve a sense of self-continuity. Theoretically, the three bases might contradict each other (e.g., a story of how one has changed contradicts the belief that one has been stable) and they might substitute for each other (e.g., attachment to an object that reminds one of one's childhood might compensate for catastrophic change or for a broken narrative). Use of the three bases would depend on their contextual availability as well as individuals' beliefs and cognitive styles.

All three bases may underlie experiences of self-continuity not just from past to present but also into the future. Attributes that have remained stable in the past—especially if linked to belief in an unchanging essence—may be projected onto the future self. Significant self-narratives will often extend beyond the present, encompassing future goals or expectations. Objects or memories that make people feel close to their past self are likely to be cherished and preserved into the future. Indeed, there is evidence that past-to-present and present-to-future continuity are positively correlated (Sokol & Eisenheim, 2016). Although individuals may differ in levels of past-, present- or future-orientation (Zimbardo & Boyd, 1999), neurological and clinical studies reveal substantial overlap between the neural substrates of memory and imagining the future (El Haj, Antoine, & Kapogiannis, 2015; Schacter et al., 2012), and patterns of past and future self-continuity show similar trends over the life-span (Rutt & Löckenhoff, 2016). Moreover, experimentally induced nostalgia for one's past fosters greater optimism for one's future (Cheung et al., 2013), whereas a lack of past-to-present self-continuity is associated with suicidality—implying an ultimate level of disregard for one's future self (Ball & Chandler, 1987; Sokol & Eisenheim, 2016).

Constructing Self-Continuity Across Cultures

Motivated Identity Construction Theory emphasizes that identity motives can be satisfied in different ways across cultures, depending on the context of prevailing beliefs, values and practices (Becker et al., 2012, 2014; Vignoles, 2011). We consider here whether there are cross-cultural differences in how self-continuity is achieved. Chandler et al. (2003) compared how European-heritage and First Nations Canadian adolescents constructed a sense of self-continuity. They found that these two cultural groups tended to privilege essentialist or narrativist strategies, respectively, illustrating that people living in different socio-cultural contexts may emphasize different bases of self-continuity. However, conclusions are limited by the bicultural nature of the comparison. Two cultural groups may differ on any number of dimensions, and one cannot establish which cultural dimension is responsible for an observed difference unless one studies a wide sample of cultural groups (Becker et al., 2012).

We theorized that constructions of self-continuity should be grounded in beliefs, or implicit theories, about personhood (after Chandler et al., 2003; Ross, 1989). Personhood beliefs refer to people's understandings of what it is to be a person, or what it is that defines human beings (see Church et al., 2003; Dweck, 2000; Haslam, Bastian, & Bissett, 2004; Norenzayan, Choi, & Nisbett, 2002; Owe et al., 2013). Among these beliefs, *mutable (vs. immutable) personhood beliefs* appear especially relevant to the construction of a sense of self-continuity: This dimension opposes an incremental or dynamic theory, which sees persons as malleable and able to change over time, with an entity or fixed theory, the belief that human beings are stable and immutable entities who cannot change even when they try (Dweck, 2000). Indeed, in Chandler and colleagues' (2003) studies, participants privileging an essentialist strategy were more likely to believe in an immutable view of personhood, whereas participants favoring a narrativist strategy endorsed a more mutable view. We thus expected that mutability beliefs—the belief that human attributes are malleable and able to

change—would moderate which bases of self-continuity are used by members of a given cultural group. Although few studies have investigated cross-cultural variations of mutable (vs. immutable) personhood beliefs, some findings suggest that they are less endorsed in Latin American and East-Asian than in North American cultures (Chiu, Dweck, Tong & Fu 1997; Church et al., 2003, 2005; but see also Chiu, Hong & Dweck 1997; Kashima et al., 2005; Norenzayan et al., 2002). Notably, when cultural differences in mutability beliefs are found, these do not seem to map onto variation in the commonly studied cultural dimension of individualism-collectivism (Hofstede, 1980; Triandis, 1995).

We contrasted mutability beliefs with a second dimension of personhood beliefs: *contextualized (vs. decontextualized) personhood beliefs* (Owe et al., 2013). This dimension opposes a contextualized view of personhood—the belief that contextual information, such as one's family, place of origin, social position and group memberships, is important for understanding a person—with a decontextualized view of personhood—the belief that individuals can be understood in their own terms, without reference to contextual information. Thus, where mutable (vs. immutable) personhood beliefs focus on the individual in relation to time, contextualized (vs. decontetxualized) personhood beliefs focus on the individual in relation to others. Unlike mutability beliefs, contextualism beliefs are viewed as a facet of cultural individualism-collectivism, and they are closely related to other indicators of this dimension (Owe et al., 2013; Vignoles et al., 2016). Since Chandler et al. (2003) claimed that the strategies used to construct a sense of self-continuity are based on mutability beliefs, not on individualism-collectivism, we were interested to compare mutability beliefs and contextualism beliefs as potential moderators of the bases of self-continuity.

Motivated Identity Construction Theory predicts that bases of identity motive satisfaction will depend not simply on an individual's personal endorsement of relevant beliefs or values, but on the prevailing beliefs and values within their cultural environment

(Vignoles, 2011). Constructing an identity is not a lone enterprise, and identity claims must be recognized—although not necessarily accepted—by others in order to be believable (Swann & Bosson, 2008; Vignoles, in press). Hence, the personhood beliefs of surrounding others may be as important as the individual's own personhood beliefs in determining what constitutes a viable sense of self-continuity. Researching two other identity motives, Becker et al. (2012, 2014) found that bases of both self-esteem and distinctiveness were moderated mainly by *culture-level* variation in relevant beliefs and values, rather than by individual-level variation on the same dimensions. Hence, we were interested to test here to what extent bases of self-continuity would be moderated by individuals' personal beliefs about personhood and/or by the prevailing cultural climate of such beliefs.

Research Aims and Hypotheses

In a major extension of previous research, we conducted a large-scale, cross-cultural study aiming to test a culturally contextualized model of self-continuity among adult members of a highly diverse set of 55 cultural groups. Our study included semi-literate as well as educated participants recruited from rural as well as urban communities across 33 developed and developing nations spanning all inhabited continents.

Rather than focus on self-reported individual differences in the construction of self-continuity, we modeled this as a within-person process that might be moderated by cultural and/or individual differences in personhood beliefs. Correspondingly, we used a within-person methodology to measure the strength of association of self-continuity with each of the three bases (illustrated in Figure 1). Each participant listed freely several aspects of his/her identity (e.g., "woman", "musician", "ambitious"), then rated each identity aspect (1) for the extent to which it provided a sense of self-continuity, and (2) for each of the three bases of self-continuity, i.e., stability, narrative, and associative links to one's past. Ratings of stability, narrative, and associative links were used to predict *within-person variation* in the

self-continuity ratings. Thus, rather than ask people directly on what they based their sense of self-continuity (cf., Chandler et al., 2003), we measured these bases indirectly through statistical patterns in their data (Becker et al., 2012, 2014). A notable advantage of this technique is that, by focusing on within-person variance (i.e., analyzing patterns in responses from each individual to a series of questions), the results are insulated from several common sources of methodological bias in cross-cultural research, including the reference-group effect (Heine, Lehman, Peng, & Greenholtz, 2002) and acquiescent response styles (Smith, 2004). Such potential effects should not confound our within-person analyses, as they will be stable for an individual across his or her ratings of different identity aspects.

Moreover, our study was designed to test whether cultural and/or personal mutability beliefs would moderate the degree to which individuals used stability, narrative, or associative links to one's past in their construction of a sense of self-continuity. Using multilevel analyses, we were able to evaluate 1) to what extent living in a specific cultural context (i.e., cultural beliefs) predicted differences in the strategies that people use; and 2) to what extent personally endorsing specific beliefs predicted such differences. Thus, across cultures, we expected that the degree to which people used each of these strategies would vary depending on cultural and/or personally endorsed mutable (vs. immutable) personhood beliefs.

Based on the theorizing of Chandler et al. (2003), we hypothesized:

H1: On average, participants would derive a sense of self-continuity from aspects of their identity that made them see themselves as *stable* (H1a). This tendency would be stronger among members of *cultural groups with lower mutability beliefs* (H1b) and/or among participants with *lower personal endorsement of mutability beliefs* (H1c).

H2: On average, participants would derive a sense of self-continuity from aspects of their identity that made them think of their lives as a *narrative* (H2a). This tendency would be stronger among members of *cultural groups with higher mutability beliefs* (H2b) and/or among participants with *higher personal endorsement of mutability beliefs* (H2c).

Based on the theorizing of Vignoles et al. (2017), we hypothesized:

H3: On average, participants would derive a sense of self-continuity from aspects of their identity that provided *associative links to their past* (H3a). This tendency would be moderated by *cultural group differences in mutability beliefs* (H3b) and/or by participants' *personal endorsement of mutability beliefs* (H3c).

Note that hypotheses H3b and H3c are two-tailed and exploratory, since we had no a priori basis to predict how, if at all, the importance of associative links to the past might be related to mutable (vs. immutable) personhood beliefs. We included these hypotheses for completeness and for consistency with H1 and H2. To assess the specificity of the hypothesized effects of mutability beliefs, we also tested in parallel for potential moderating effects of contextualized (vs. decontextualized) personhood beliefs (Owe et al., 2013), about which we made no specific predictions.

Method

Participants and Procedure

We included measures in a large multinational study into culture and identity processes (see also Owe et al., 2013, Study 2; Vignoles & Brown, 2011, Study 2; Vignoles,

Owe et al., 2016, Study 2). Various means were used to recruit convenience samples of adults in different locations, including a snowballing technique among the researchers' social networks, through community groups and nongovernmental organizations, and with the help of university students who collected data from their relatives.

We thus sampled and distinguished between diverse cultural groups within each nation. A total of 7,287 adults from 55 cultural groups in 33 nations participated in the study. The mean age of the overall sample was 35.27 years, and 57% of participants were female. Additional descriptive data, including sample size, gender, and age distribution for each sample are provided in the online supplement. Sample sizes in our analyses differ slightly because of missing data on the variables included in the models.

Measures

Collaborators translated the questionnaire from English into the main language of each country (see online supplement). Bilinguals unfamiliar with the research topic and hypotheses provided independent back-translations. Ambiguities and inconsistencies were identified and resolved by discussion, and the translations adjusted.

Generation of identity aspects. First, we asked participants to generate freely eight answers to the question, "Who are you?" (hereafter, *identity aspects*), using an adapted version of the Twenty Statements Test (Kuhn & McPartland, 1954). This task was at the beginning, so that responses would be constrained as little as possible by theoretical expectations or demand characteristics. It was printed on a page that folded out to the side of the questionnaire, so that participants could see their identity aspects when rating them subsequently.

Researchers have sometimes criticized the Twenty Statements Test for priming an individualized, decontextualized, introspective 'self,' arguably closer to Western than to other cultural conceptions of selfhood (see Smith et al., 2013). Based on discussions with our

international collaborators, we produced a culturally de-centered version of this task, rewording the original question, "Who am I?" into "Who are you?" and developing a revised set of instructions (see Becker et al., 2012, for a similar version):

> "In the numbered spaces below, please write down 8 things about yourself. You can write your answers as they occur to you without worrying about the order, but together they should summarize the image you have of who you are. You can write anything you think describes you well. Your answers might include social groups or categories you belong to, personal relationships with others, as well as characteristics of yourself as an individual. Some may be things that other people know about, others may be your private thoughts about yourself. Some things you may see as relatively important, and others less so. Some may be things you are relatively happy about, and others less so."

Common answers indeed included individual characteristics (e.g., "intelligent", "shy"), social roles and interpersonal relationships (e.g., "friend", "pupil"), and social categories (e.g., "girl", "Hungarian").

Ratings of identity aspects. Participants subsequently rated each of their freely generated identity aspects on various dimensions. Each dimension was presented as a question at the top of a new page, with a block of 11-point scales (0 = *not at all*; 10 = *extremely*) positioned underneath to line up with the identity aspects. One question measured the association of each identity aspect with a general *sense of self-continuity* ("To what extent does each of these things make you feel that your past, present, and future are connected?").

After some intervening measures, we included items reflecting the three hypothesized bases of self-continuity: *stability* ("To what extent is each of these things stable and

unchanging?"), *narrative* ("How much does each of these things make you think of your life as a story?"), and *associative links to one's past* ("How much does each of these things remind you of your past?"). To avoid carry-over effects, these three items were separated from the self-continuity item by several pages of intervening measures and were interspersed among several other rating questions, related to another identity motive (distinctiveness).

Mutable (vs. immutable) personhood beliefs. A scale developed by Levy, Stroessner, and Dweck (1998; with items reworded by Bastian & Haslam, 2006) was used to measure mutability beliefs. We used six balanced items from the scale, including, for example, "You can always substantially change the kind of person you are" and "The kind of person you are is something very basic about you and it can't be changed very much" (reversed). Participants rated their level of agreement with each statement on a 6-point scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). We calculated mean individual scores (i.e., personal endorsement) and mean for each cultural group (i.e., cultural beliefs) to include as moderators in our analyses (overall $M = 3.12$; $SD = 1.01$). Both individual (overall $\alpha = .73$) and cultural level ($\alpha = .85$) reliabilities were good. The mutability belief scores by cultural group can be found in the online supplement.

Contextualized (vs. decontextualized) personhood beliefs. This scale, developed by Owe et al. (2013), taps into the beliefs about personhood that are thought to underlie cultural collectivism. It measures beliefs about the importance (vs. unimportance) of social and contextual attributes in defining a person. The scale consists of six balanced items, including, for example, "To understand a person well, it is essential to know about his/her family" and "One can understand a person well without knowing about the place he/she comes from" (reversed). Participants rated their level of agreement with each statement on a 6-point scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). We calculated mean individual scores (i.e., personal endorsement) and mean for each cultural group (i.e., cultural beliefs) to

include as moderators in our analyses (overall $M = 3.40$; $SD = 1.02$). Both individual (overall $\alpha = .75$) and cultural level ($\alpha = .89$) reliabilities were good. The contextualism belief scores by cultural group can be found in the online supplement.

Demographic information. Participants indicated their age, gender, country of birth, nationality, and several other demographic characteristics.

Analytical Approach

Given the nested data structure, we tested predictions of within-person variance in sense of self-continuity using multilevel regression analysis (Hox, 2002). Level 1 units were identity aspects (N = 54,352), with individuals as Level 2 units (N = 6,915), cultural groups as Level 3 units (N = 55), and nations as Level 4 units (N = 33). At Level 1, we modelled regression coefficients for within-person predictors of the self-continuity ratings (stability, narrative, and associative links). These predictors were centered around participant means, so that the within-person effects we were interested in were not confounded with between-person covariance (Hofmann & Gavin, 1998). At Level 2, we modelled regression coefficients for individual difference variables (personal beliefs, age, and gender). We included gender and age to control for differences in the composition of our samples, but had no theoretical basis for predicting differences based on these variables. At Level 3, we modelled regression coefficients were for culture-level variables (cultural beliefs). Continuous variables at Levels 2 and 3 were centered around their grand means, and a contrast code was used for gender (female = -1, male = 1). We used grand-mean centering rather than group-mean centering at Level 2 in order to control for the potential confounding influence of aggregated individual-level moderations when testing culture-level moderations at Level 3 (Firebaugh, 1980; Hofmann & Gavin, 1998). We included no predictors at Level 4, but we modelled an error term at this level of analysis to account for the clustering of cultural groups within nations. Analyses were conducted in MLwiN 2.35 (Rasbash, Browne, Healy,

Cameron, & Charlton, 2015), using maximum likelihood estimation with convergence criterion of .000001.

The study included measures of two different types of personhood beliefs: mutability beliefs and contextualism beliefs. These two measures showed near-zero correlations at the cultural level (r[53] =.03, p = .836) and at the individual level (r[7231] = -.06, p < .001), thus confirming their discriminant validity.

Results

We computed a series of multilevel regression models predicting self-continuity ratings using the three hypothesized bases of self-continuity: stability, narrative, and associative links. Descriptives and correlations for these variables are presented in Table 1. Regression model parameters are shown in Table 2. We conducted analyses in two steps. First, we examined within-person relationships between the three bases of self-continuity and the general sense of self-continuity. Model 1 included just these three ratings as Level 1 predictors. Supporting H1a to H3a, all three bases of self-continuity were significant predictors of the self-continuity ratings and had small-to-medium size effects (Betas from .22 to .34, ps <.001). On average, participants tended to derive greater sense of self-continuity from those of their identity aspects that made them see themselves as stable, view their lives as a story, and that reminded them of their past. This model accounted for an estimated 24.04% of within-person variance in self-continuity.

We added cross-level interaction effects to see whether the weight of self-continuity on each of the three bases was significantly moderated by personal and/or cultural beliefs about personhood (Model 2). We entered scores of individual-level mutable (vs. immutable) and contextualized (vs. decontextualized) personhood beliefs as Level 2 moderators, and culture-level mutable (vs. immutable) and contextualized (vs. decontextualized) personhood beliefs as Level 3 moderators, of the Level 1 regression weights on the three bases of self-

continuity. Following Aiken and West (1991), we included the underlying main effects alongside these theoretically important interaction effects. We also controlled for age and gender of participants as main effects and moderators on Level 2. Compared to Model 1, this model provided a significant improvement in fit, $\chi^2(24) = 197.15$, $p < .001$.

Crucially, significant cross-level interaction effects involving mutability beliefs showed a pattern supporting our predictions (see Table 2). Although it did not vary significantly with cultural mutability beliefs (H1b), stability was a stronger predictor of self-continuity among participants endorsing lower mutability beliefs (H1c: B = -.02, $p < .001$). Narrative was a stronger predictor in cultures where people on average endorsed higher mutability beliefs (H2b: B = .07, $p < .001$), although it did not vary by personal endorsement of mutability (H2c). Contrary to our exploratory hypotheses H3b and H3c, the extent to which participants derived a sense of self-continuity from aspects of their identity that reminded them of their past was not moderated significantly by personal nor by cultural mutability beliefs.[1]

As discussed by McClelland and Judd (1993), it is notoriously difficult to detect moderation effects in correlational studies, and even substantively important interactions may account for seemingly trivial amounts of variance. To help readers evaluate the substantive importance of the effects we found, we have estimated the magnitude of the Level 1 effects at upper- and lower-bound values of the mutability belief dimension. We estimated simple slopes of the regression of self-continuity on the three bases at extreme values (2 SD below and above the mean) of personal endorsement of mutability (1.10; 5.14), and at minimum (2.45) and maximum (3.82) values of cultural mutability. As shown in Figure 2, the effect of stability was somewhat stronger among individuals with lower mutability beliefs (B = .27, $p < .001$), compared to those with higher mutability beliefs (B = .20, $p < .001$). In contrast, the

effect of narrative was stronger in cultures with the highest mutability beliefs (B = .32, p < .001), compared to those with the lowest mutability beliefs (B = .22, p < .001).

We also found evidence of moderation by personal and cultural contextualism beliefs. Stability was a stronger predictor of self-continuity in cultures with higher contextualism beliefs (B = .04, p = .009), but a weaker predictor among individuals with higher personal endorsement of contextualism beliefs (B = -.01, p = .050). Narrative was a stronger predictor of self-continuity in cultures with lower contextualism beliefs (B = -.05, p < .001), whereas associative links was a stronger predictor of self-continuity in cultures with higher contextualism beliefs (B = .04, p = .002).

We estimated simple slopes of the regression of self-continuity on the three bases at extreme values (2 SD below and above the mean) of personal endorsement of contextualism (1.36; 5.44), and at minimum (2.79) and maximum (4.49) values of cultural contextualism. As shown in Figure 3, the effect of stability was somewhat stronger in cultures with the highest contextualism beliefs (B = .28, p < .001), compared to those with the lowest contextualism beliefs (B = .22, p < .001), but somewhat weaker among individuals with higher contextualism beliefs (B = .22, p < .001), compared to those with lower contextualism beliefs (B = .26, p < .001). The effect of narrative was somewhat weaker in cultures with the highest contextualism beliefs (B = .21, p < .001), compared to those with the lowest contextualism beliefs (B = .30, p < .001). In contrast, the effect of associative links was somewhat stronger in cultures with the highest contextualism beliefs (B = .23, p < .001), compared to those with the lowest contextualism beliefs (B = .16, p < .001).

Discussion

Patterns in the responses of adult participants from 55 cultural groups in 33 nations, supported theoretical predictions that seeing oneself as stable, thinking of one's life as a story (Chandler et al., 2003), and experiencing associative links to one's past (Vignoles et al.,

2017) would be alternative ways of constructing a sense of self-continuity. All three bases significantly predicted the extent to which participants viewed aspects of their identities as connecting their past, present and future (H1a to H3a). Moreover, across the sampled range of the moderators in our analyses, the effects of all three bases remained significant. This is a first empirical demonstration of how each of the three bases uniquely and robustly predicts within-person variation in the sense of self-continuity.

Our second goal was to test whether and how these bases of self-continuity would vary with individual and cultural differences in personhood beliefs. Supporting Chandler and colleagues' (2003) predictions, mutable (vs. immutable) personhood beliefs moderated how self-continuity was constructed. Individuals with lower mutability beliefs tended to base their sense of self-continuity more on stability (H1b), whereas members of cultures with higher mutability beliefs tended to base their sense of self-continuity more on narrative (H2c). These findings extend previous support for Motivated Identity Construction Theory regarding the cultural flexibility of identity motives (Becker et al., 2012, 2014).

Notably, these two predicted moderation effects were found at different levels of analysis—individual or cultural. Our results showed that participants' use of stability varied with personally endorsed mutability beliefs (while controlling for culture-level differences): Individuals who believed more strongly that people cannot change tended to derive a sense of self-continuity especially from those of their identity aspects that they perceived as more stable. In contrast, participants' use of narrative varied with culturally normative mutability beliefs (i.e., the average beliefs within a cultural group, while controlling for individual-level differences): Members of cultural groups in which it was believed more strongly on average that people can change tended to derive a sense of self-continuity more from those of their identity aspects that made them think of their lives as a story.

These moderation effects at different levels of analysis require different levels of explanation, consistent with viewing identities as constructed through a complex interplay of psychological processes and sociocultural practices (Vignoles, in press). Basing one's self-continuity on stability seemingly depends on intrapsychic processes, since the association of self-continuity with stability is stronger to the extent that the individual holds a correspondingly immutable view of personhood, regardless of the beliefs that prevail in her cultural context. In contrast, basing one's self-continuity on narrative seemingly depends to a greater extent on cultural practices, since this association is stronger to the extent that the individual's cultural group holds a correspondingly mutable view of personhood, regardless of the individual's own personhood beliefs. Constructing narratives is a profoundly social process—stories have to be told, and thus shared, before they can be internalized (Gergen & Gergen, 1988). Hence, it would be the sociocultural practice of "storytelling", rather than an intrapsychic process, that allows people to derive self-continuity from parts of themselves that make them think of their lives as stories (Hammack, 2008).

Contextualism beliefs also moderated the ways in which self-continuity was constructed. These moderations, mainly situated at the cultural level, showed that members of groups with a more contextualized view of personhood associated self-continuity more strongly with stability and associative links to one's past, whereas members of groups with a more decontextualized view of personhood associated self-continuity more strongly with narrative.[2] These findings were not predicted a priori, and they would benefit from replication. Nonetheless, one possible—albeit speculative—interpretation focuses on individualism-collectivism, the cultural dimension of which contextualism beliefs are one facet (Owe et al., 2013; Vignoles et al., 2016). Individualist societies have been associated with higher residential mobility (Oishi & Kisling, 2009), relational mobility (Yuki & Schug, 2012), divorce rates (Lester, 1995), and arguably mid-life career changes (Sullivan & Arthur,

2006). Thus, one's place of residence, core personal relationships, and occupation—all of which are likely to be major sources of day-to-day continuity for many people—tend to be more changeable over the long term in individualist societies (where decontextualized personhood beliefs prevail) than in collectivist societies (where contextualized personhood beliefs prevail). Perhaps, then, the changeability of these important domains of identity may somewhat reduce the viability of basing one's sense of self-continuity on stability over the long term, whereas it would make the need for a personal narrative more pressing.

We should note several limitations of the current study. First, our findings are based on cross-sectional data, and so we cannot be certain about causal directions. Longitudinal and experimental research would help to untangle the underlying causal relationships. Second, our focus on identity aspects as discrete units of analysis means that our dependent variable potentially does not provide a full account of self-continuity. Indeed, one important part of establishing self-continuity may be the forming of a coherent sense of self that ties together different identity aspects, rather than applying to each of them separately. Third, our focus on associative links to the past as a source of self-continuity may have missed the potential value for self-continuity of associative links to one's expected future—for example, through identifying with objects that symbolize cherished life goals or aspirations. Fourth, our unpredicted findings of how contextualism beliefs moderated the use of bases of self-continuity, and the speculative interpretations that we offer here, require replicating and testing in future research. Last, we have focused here on predicting individual and cultural differences in the tendency to rely on each of the three bases. An interesting direction for future research would be to investigate how these bases are dynamically related: For example, if their sense of stability is undermined through life events or experimental interventions, then people may turn to narrative or to associative links in order to restore self-continuity (Sedikides et al., 2015).

To conclude, the current study demonstrates the importance of attending to the multifaceted nature of self-continuity. This can be based on seeing oneself as stable or on creating a narrative (as theorized by Chandler et al., 2003), which rely on explicit reasoning. However, it can also be based on experiencing associative links to one's past (as theorized by Vignoles et al., 2016), where self-continuity is felt at a more implicit level. Finally, cultural context should be taken into account when investigating people's strivings for self-continuity, as these may express themselves in different ways depending on individual, but also cultural beliefs about personhood. Understanding better the diverse and flexible ways that individuals can use to construct a sense of self-continuity, as well as the individual and cultural factors predicting their use, will help researchers to understand and practitioners to ameliorate the negative personal and social consequences that can occur when self-continuity strivings are frustrated or go awry (Ball & Chandler, 1989; Lampinen et al., 2004; Rosenberg, 1986; Smeekes & Verkuyten, 2015).

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Footnotes

[1] Similar estimates for the moderation effects of mutable (vs. immutable) personhood beliefs were found in a model without controls for contextualism beliefs, gender and age.

[2] This pattern of findings would not offer an alternative explanation of the differences observed by Chandler et al. (2003) between First Nations and European-heritage Canadians, where the former relied more on narrative and the latter on stability. Here, stability was a stronger basis for continuity not only in cultural groups with more contextualized personhood beliefs, but also among individuals with more *de*contextualized personhood beliefs. Although it is intriguing to find opposing effects at two different levels of analysis, the individual-level moderation especially should not be over-interpreted, considering that it only very narrowly reached statistical significance at the conventional .05 level.

Table 1.

Means, Standard Deviations, and Zero-Order Correlations between Ratings of Identity Aspects (listwise N = 54,352) for Self-Continuity, Stability, Narrative, and Associative Links.

Variable	*M*	*SD*	1	2	3	4
1. Self-Continuity	7.36	2.61	–	.39	.44	.47
2. Stability	7.63	2.43	.37	–	.27	.30
3. Narrative	6.57	2.94	.41	.27	–	.43
4. Associative links	6.73	2.94	.40	.27	.37	–

Note. Values below diagonal use raw ratings, and values above diagonal use participant mean-centered values. All coefficients are significant at $p < .001$.

Table 2.
Estimated Parameters of Multilevel Regression Predicting Self-Continuity Ratings.

	Model 1				Model 2			
	B	SE	*p*	β	B	SE	*p*	β
Within-participants main effects (Level 1: N = 54,352 identity aspects)								
Stability [H1a]	.239	.004	<.001	.226	.238	.005	<.001	.226
Narrative [H2a]	.269	.004	<.001	.260	.270	.005	<.001	.260
Associative links to one's past [H3a]	.186	.004	<.001	.198	.187	.004	<.001	.198
Individual-level main effects (Level 2: N = 6,915 individuals)								
Personal mutability beliefs					-.016	.023	.472	-.009
Personal contextualism beliefs					.030	.022	.180	.017
Age					.075	.018	<.001	.055
Gender					-.101	.022	<.001	-.027
Culture-level main effects (Level 3: N = 55 cultural groups)								
Cultural mutability beliefs					.006	.190	.976	.004
Cultural contextualism beliefs					.580	.210	.006	.366
Individual-level moderators of within-participants slopes								
Personal mutability beliefs x stability [H1b]					-.018	.005	<.001	-.017
Personal mutability beliefs x narrative [H2b]					.003	.004	.529	-.003
Personal mutability beliefs x associative links to one's past [H3b]					-.005	.004	.211	-.005

	Model 1				Model 2			
	B	SE	*p*	β	B	SE	*p*	β
Personal contextualism beliefs x stability					-.009	.004	.050	-.009
Personal contextualism beliefs x narrative					.003	.004	.535	.003
Personal contextualism beliefs x associative links to one's past					-.007	.004	.084	-.007
Age x stability					.012	.004	.001	.015
Age x narrative					.017	.004	<.001	.022
Age x associative links to one's past					-.003	.003	.237	-.004
Gender x stability					-.013	.005	.003	-.006
Gender x narrative					-.013	.005	.004	-.006
Gender x associative links to one's past					.008	.004	.039	.004
Culture-level moderators of within-participants slopes								
Cultural mutability beliefs x stability [H1c]					.006	.013	.617	.002
Cultural mutability beliefs x narrative [H2c]					.070	.013	<.001	.024
Cultural mutability beliefs x associative links to one's past [H3c]					-.007	.012	.569	-.003
Cultural contextualism beliefs x stability					.036	.014	.009	.012
Cultural contextualism beliefs x narrative					-.054	.014	<.001	-.018
Cultural contextualism beliefs x associative links to one's past					.040	.013	.002	.014
Residual variance								
Within-participant level	3.013	.020	<.001		3.003	.020	<.001	
Individual level	2.741	.053	<.001		2.724	.053	<.001	
Culture level	.085	.033	.011		.055	.024	.024	

	Model 1				Model 2			
	B	SE	*p*	β	B	SE	*p*	β
National level	.152	.059	.010		.158	.054	.004	
Deviance			228,785				228,588	

Note. Gender was contrast coded as female = -1, male = 1; age was in units of 10 years. Values of β were derived from B weights by multiplying by the standard deviation of the predictor and dividing by the standard deviation of the outcome (Hox, 2002); because between-participant variance was excluded from level 1 predictors by within-participant centering, we used within-participant standard deviations for the outcome and level 1 predictors in level 1 main effects and cross-level interaction effects; for main effects at level 2 and 3, we used between-participant and between-culture standard deviations respectively; for cross-level interactions, we multiplied by the standard deviation of both interacting predictors at their respective levels of analysis.

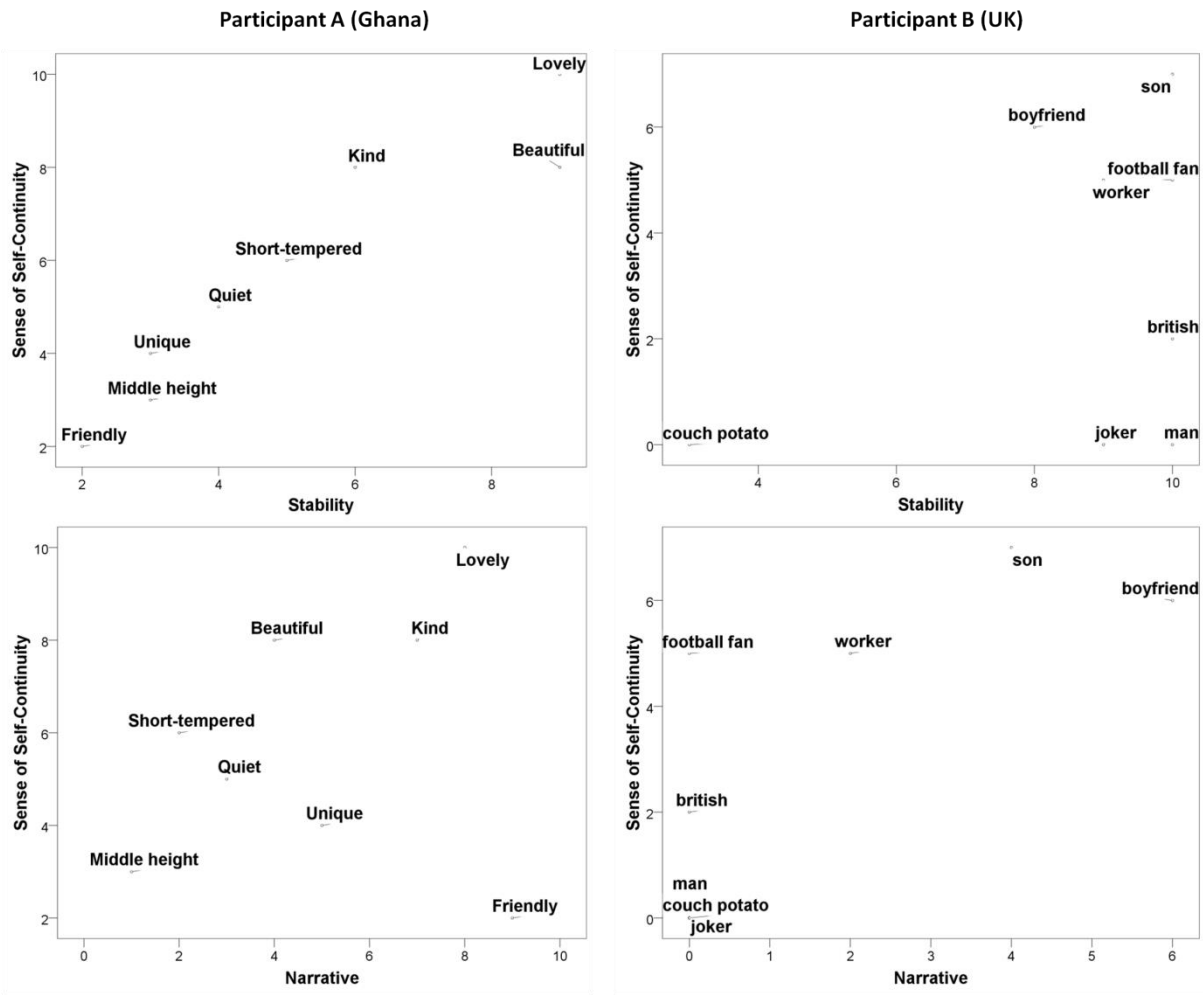

Figure 1.

Illustrative examples of identity aspects and their ratings from one Ghanaian and one British participant.

Note. Here, Participant A (left) shows a strong positive correlation between the extent to which an aspect of identity is perceived as stable and unchanging (top) and the sense of self-continuity provided by that aspect. A weaker correlation appears between the extent to which his identity aspects make him think of his life as a story (bottom) and the sense of self-continuity. This indicates that the sense of self-continuity of Participant A is based more on stability, and less on narrative. Participant B (right) shows a very different profile and seems to base his sense of self-continuity more on narrative, and less on stability.

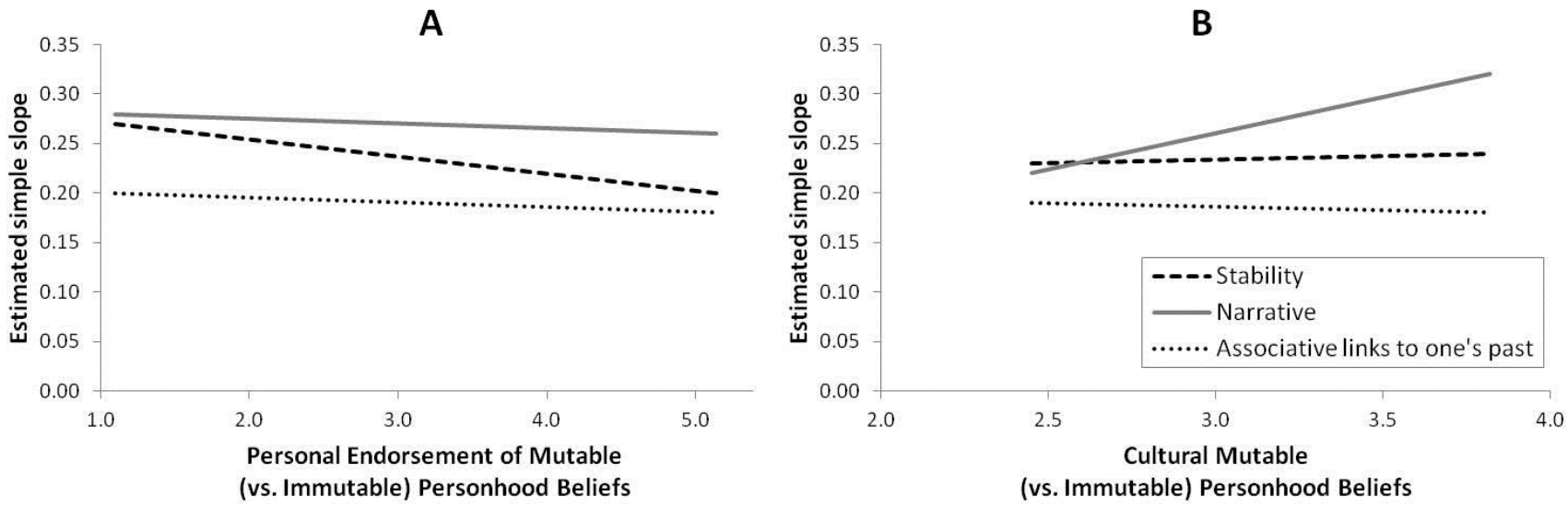

Figure 2.

Stability, narrative, and associative links as predictors of sense of self-continuity, depending on *personal endorsement of mutability beliefs* (Panel A) and on *cultural mutability beliefs* (Panel B).

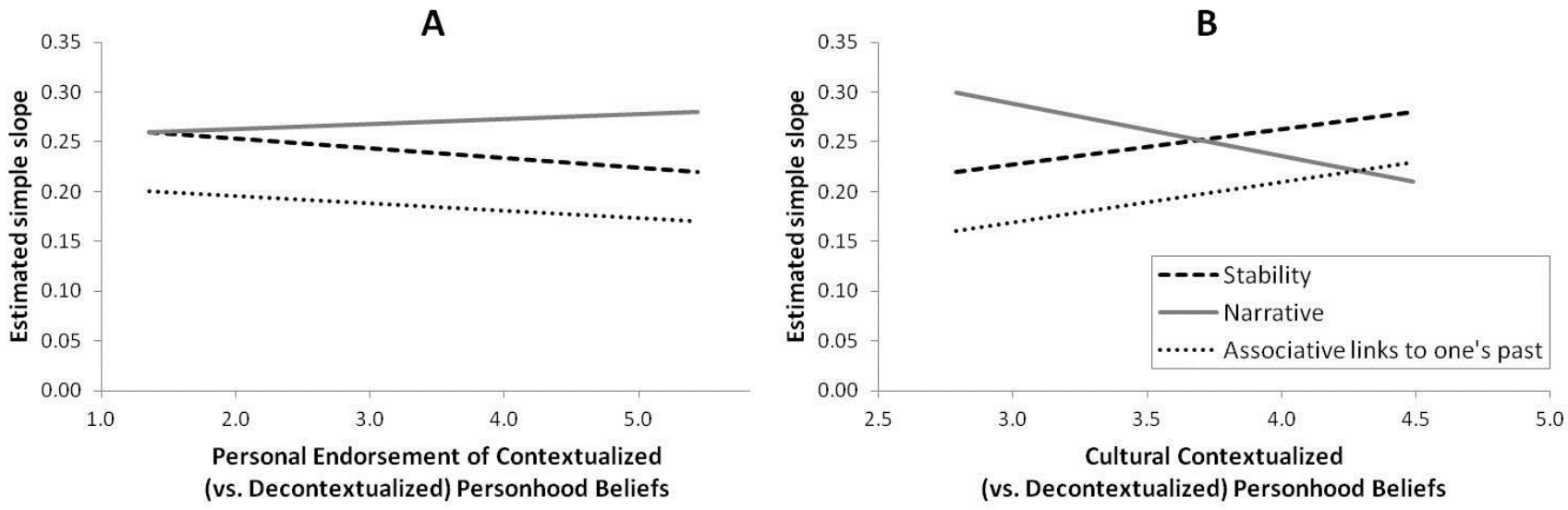

Figure 3.

Stability, narrative, and associative links as predictors of sense of self-continuity, depending on *personal endorsement of contextualism beliefs* (Panel A) and on *cultural contextualism beliefs* (Panel B).

Online appendix

Demographic Details for Each Cultural Sample.

Cultural group	*N*	*M* age	*Age min*	*Age max*	*SD* age	% fem.	*M* mutable (vs. immutable) beliefs	*SD* mutable (vs. immutable) beliefs	*M* contextualized (vs. decontextualized) beliefs	*SD* contextualized (vs. decontextualized) beliefs	Language	City/region
Belgium High SES	185	43.78	27	61	8.15	48	2.69	.94	3.04	1.05	French	French speaking Belgium
Belgium Low SES	178	28.57	18	54	9.23	47	2.94	.96	2.94	1.19	French	Wallonia
Brazil Central	185	33.60	18	77	13.74	44	3.61	1.04	3.70	1.06	Portuguese	Goiânia
Brazil North East	150	38.95	20	67	11.62	73	3.53	1.03	3.51	1.06	Portuguese	João Pessoa
Brazil South	165	25.97	16	59	9.65	56	3.45	.89	3.48	1.05	Portuguese	Porto Alegre
Cameroon Bafut	100	26.07	19	45	6.07	67	3.47	.76	3.15	.87	English	North West
Chile Majority	149	44.97	22	77	12.42	58	3.12	1.12	3.07	.96	Spanish	Mainly Santiago Metropolitan Region
Chile Mapuche	150	38.16	18	72	14.79	55	3.01	1.00	3.35	1.21	Spanish	Temuco, La Araucanía Region
China East	124	31.58	18	70	8.24	69	2.68	.72	4.05	.84	Chinese	Beijing
China West	135	31.15	18	60	8.67	68	2.88	.69	3.65	.85	Chinese	Sichuan
Colombia rural	149	35.21	18	69	13.37	62	3.19	.85	3.20	1.00	Spanish	San Martín, Meta and Villavicencio, Meta

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Colombia urban	150	38.72	19	68	11.48	60	3.29	1.06	3.14	1.20	Spanish	Bogota
Egypt	164	31.12	19	65	9.95	52	2.88	1.08	3.45	.93	Arabic	Cairo and greater Cairo area
Ethiopia highlanders	150	33.11	20	72	9.21	38	3.02	1.05	4.49	.99	Amharic	Oromiya
Ethiopia urban	150	35.02	20	65	8.97	46	3.51	1.02	3.95	.97	Amharic	Addis Ababa
Georgia Baptists	81	44.85	18	85	17.17	75	3.50	.93	3.39	1.11	Georgian	Tbilisi
Georgia Orthodox	138	39.16	18	69	12.04	45	2.45	1.04	3.65	.98	Georgian	Tbilisi
Germany East	153	40.26	18	74	14.68	58	2.71	.83	3.35	.96	German	All over East Germany
Germany West	104	39.71	16	79	15.67	58	2.85	.91	3.36	1.02	German	All over West Germany
Ghana Ashanti	116	28.58	16	44	5.06	23	3.33	.71	3.19	.91	English	Kumasi Regional Capital
Hungary Majority	151	36.83	19	85	12.74	46	3.11	1.01	3.40	1.00	Hungarian	Budapest
Hungary Roma	92	33.37	17	65	11.65	48	3.32	.89	3.17	.90	Hungarian	Various
Iceland	124	35.19	20	67	13.25	67	3.55	.82	3.15	.86	Icelandic	Greater Reykjavík area
Italy rural	90	40.30	18	67	13.62	72	2.94	1.05	3.39	.92	Italian	mainly Lombardy

Cultural group	*N*	*M* age	*Age min*	*Age max*	*SD* age	% fem.	*M* mutable (vs. immutable) beliefs	*SD* mutable (vs. immutable) beliefs	*M* contextualized (vs. decontextualized) beliefs	*SD* contextualized (vs. decontextualized) beliefs	Language	City/region
Italy urban	83	37.59	18	66	12.35	69	3.04	1.03	3.57	1.01	Italian	mainly Lombardy
Japan Hokkaido	73	50.87	25	82	12.42	63	2.78	.80	3.05	.81	Japanese	Sapporo
Japan Mainland	211	41.43	18	81	15.47	60	2.87	.77	3.02	.81	Japanese	Kansai-area and Kanto-area
Lebanon E Beirut	140	35.45	17	80	13.32	52	2.57	1.06	3.08	.99	Arabic	East Beirut
Lebanon W Beirut	124	34.72	17	83	14.74	41	2.52	.96	3.47	1.05	Arabic	West Beirut
Malaysia	150	28.05	20	60	7.90	63	3.48	.60	3.79	.74	Malay	Kuala Lumpur
Namibia Damara	69	25.14	19	43	6.36	61	3.39	.90	2.91	1.08	English	Windhoek
Namibia Owambo	135	24.34	19	49	5.29	68	3.71	.78	2.91	1.01	English	Windhoek
New Zealand Pakeha	204	34.91	17	80	13.03	49	3.54	.94	3.39	.88	English	Wellington
Norway	102	37.01	19	65	13.47	57	3.39	1.16	2.79	.85	Norwegian	East-Norway
Oman	160	25.21	14	42	4.97	45	3.53	1.16	3.36	.93	Arabic	Various regions
Peru rural	73	41.31	18	72	13.38	62	3.28	.85	3.75	1.08	Spanish	Catalina (Chepén)
Peru urban	81	30.65	18	62	14.56	52	3.21	.94	3.35	.80	Spanish	Lima

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Philippines Christian	152	32.01	18	76	12.19	51	3.50	.85	4.05	.87	English/Tausug	Manila, Iloilo, Sulu
Philippines Muslim	154	24.97	18	63	8.79	50	3.60	.62	3.93	.80	English/Tausug	Sulu
Romania rural	162	37.02	14	85	15.00	59	2.77	.93	3.26	.99	Romanian	West Region of Romania
Romania urban	314	35.17	19	73	12.14	56	2.55	.97	3.21	1.04	Romanian	The West Region of Romania
Russia Caucasians	140	32.26	13	60	11.91	81	3.15	.84	3.15	.91	Russian	Chechnya Republic, Ingishetiya Republic, Stavropool province, Stavropool city, Nazran (town), Grozniy city, Malocbec town
Russia Russians	122	29.43	17	64	12.29	76	2.82	.99	3.26	.84	Russian	Moscow
Singapore	110	34.95	20	60	12.69	54	3.30	.91	3.73	.84	English	Singapore
Spain rural	75	38.61	20	91	16.04	47	2.90	.97	3.36	1.13	Spanish	La Herradura, Granada, and La Puebla de Montalbán, Toledo
Spain urban	105	41.16	20	68	13.34	55	3.00	1.00	3.43	1.08	Spanish	Madrid
Sweden	101	45.18	19	90	15.94	65	3.50	1.08	3.11	1.05	Swedish	All over Sweden

Cultural group	*N*	*M* age	*Age min*	*Age max*	*SD* age	% fem.	*M* mutable (vs. immutable) beliefs	*SD* mutable (vs. immutable) beliefs	*M* contextualized (vs. decontextualized) beliefs	*SD* contextualized (vs. decontextualized) beliefs	Language	City/region
Thailand	71	27.99	20	52	6.66	69	2.85	.84	3.92	.74	Thai	Bangkok
Turkey Alevi	114	38.88	20	68	10.97	64	2.61	.88	3.49	.85	Turkish	Ankara
Turkey Majority	134	40.62	18	71	9.91	57	2.56	.97	3.60	.91	Turkish	Bursa
Uganda Baganda	153	34.39	16	55	6.28	58	3.56	.56	3.58	.66	English	Kampala, Central region
UK rural	95	51.82	18	81	16.08	72	3.11	1.02	3.21	.93	English	All over Great Britain
UK urban	133	43.92	18	90	17.38	62	3.14	1.02	3.12	.89	English	All over Great Britain
US Colorado	92	37.07	19	70	13.98	59	3.82	1.13	3.37	.94	English	Colorado Springs
US Hispanics	122	27.57	18	67	11.04	71	3.42	1.06	3.83	.96	Spanish	Miami
Total	7287	35.27	13	91	13.40	57	3.12	1.01	3.40	1.02		